

Remarks

Claims 1, 3, 5-12, 14-19, and 21-25 are pending in the present application.

Claims 4, 13, and 20 are rejected under 35 U.S.C. 112, first paragraph. This rejection is moot in view of the cancellation of claims 4, 13, and 20.

Claims 1, 3, 10-12, and 19 are allowed. Applicants gratefully acknowledge the Examiner's indication of allowable subject matter.

Claims 5-7, 14-16, and 21-23 are rejected under 35 U.S.C. 103(a) over Kober et al. (US 6,430,216), hereafter "Kober," in view of Forsythe et al. (US 6,745,050), hereafter "Forsythe," and Limberg (US 6,606,129).

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

In this case, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference of Kober, or to combine the teachings of Kober, Forsythe, and Limberg, in the manner suggested by the Examiner. Further, Kober, Forsythe, and Limberg, taken alone or in any combination, fail to teach or suggest all the claim limitations.

Claims 5, 14, and 21 are directed to interference suppression for TDMA

and/or FDMA signal transmission. Contrastingly, Kober discloses a RAKE receiver for signal demodulation for a code division multiple access (CDMA) system. As known in the art, CDMA signals are characterized by a mixture of weighted spreading sequences, where the weights are given by the data coefficients. At the receiver, typically the RAKE principle or a refinement thereof is applied. In the present invention, however, FDMA/TDMA signals are used and, consequently, the RAKE principle cannot be used – a receiver for a non-spread signal has to be employed. To this extent, Kobler clearly fails to disclose interference suppression for TDMA/FDMA signals, as set forth in claims 5, 14, and 21 of the present patent application.

Claim 5 further includes the feature of “forming at least one orthogonal projection of at least one output signal $y_i(k)$ onto a vector \mathbf{p}_i which is assigned to this output signal $y_i(k)$.” Claims 14 and 21 include a similar feature. The claimed “orthogonal” projection can be seen, for example, in Figure 5 of the present patent application. In particular, the broken line in Figure 5 representing the projection onto the vector \mathbf{p}_i clearly forms an angle of 90° with that vector.

As admitted by the Examiner, Kobler does not disclose this feature. In particular, Kober discloses the use of an oblique projection of a signal vector as shown, for example, in Figure 4 of Kober. For such an oblique projection, the projection line strikes the projection plane at any angle different from ninety degrees – as opposed to orthogonal projectors which always strike a plane of projection at ninety degrees.

To overcome this glaring deficiency of Kobler, the Examiner relies on the teachings of Forsythe. Specifically, the Examiner asserts that Forsythe discloses the use of an orthogonal projection in column 7, lines 38-51, and that it would have been obvious to one ordinarily skilled in the art to use such an orthogonal projection in Kobler “in order to achieve a robust, generic and accommodating interference suppression.”

First, it should be noted that Forsythe is directed to a CDMA system, contrary to claims 5, 14, and 21 of the present patent application. Second, the Examiner has not pointed out any evidence in Forsythe supporting the allegation that the specific use of Forsythe’s orthogonal projection would provide “robust, generic and accommodating interference suppression” in other CDMA systems, such as that of Kobler.

Limberg fails to remedy the deficiencies of Kobler and Forsythe set forth above.

Claims 8, 17, and 24 are rejected under 35 U.S.C. 103(a) over Kober in view of Forsythe and Dogan et al. (US 6,018,317), hereafter “Dogan.”

Applicants submit that claims 8, 17, and 24 are allowable for reasons similar to those set forth above with regard to claims 5, 14, and 21. Further, Applicants submit that Dogan is directed to a strategy of interference suppression employing blind filter definition on the basis of matrix decomposition. This strategy is completely different from that used in the present invention. Accordingly, Dogan fails to remedy the deficiencies of Kobler and Forsythe set forth above.

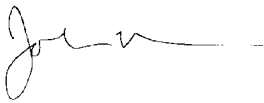
Claims 9, 18, and 25 are rejected under 35 U.S.C. 103(a) over Kober in view of Forsythe.

Applicants submit that claims 9, 18, and 25 are allowable for reasons similar to those set forth above with regard to claims 5, 14, and 21.

Accordingly, Applicants respectfully submit that claims 1, 3, 5-12, 14-19, and 21-25 are allowable.

If the Examiner believes that anything further is necessary in order to place the application in better condition for allowance, the Examiner is requested to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



By: John A. Merecki Date: August 15, 2006
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